Space Weather Forecast

Issued on Sunday, 14 November 2021 at 12:16 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of G1/Minor Storm on Day 4 (17 Nov).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar Activity was Very Low, with no notable flares in the last 24 hours. There are two small and simple sunspot regions on the Earth-facing disc. One small unipolar region has been traversing the southern hemisphere of the Sun, and is now a mature but stable feature. A second small uni-polar region has also rotated onto the Earth-facing side of the Sun. No Earth-directed CMEs were observed.

Solar Wind / Geomagnetic Activity: The solar wind speed was at background, falling from 370 km/s to 310 km/s. The total Interplanetary Magnetic Field strength was weak, with the north-south component only varying weakly with no prolonged periods of negative (southward pointing field). Geomagnetic activity remained Quiet (Kp 0-1).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Very Low to Low, with a slight chance of common class flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Background solar winds days 1-3 (14th-16th) are forecast to become elevated day 4 (17th) due to the arrival of the faster solar winds from a coronal hole. Geomagnetic activity is expected to be mostly Quiet, perhaps Unsettled at times, before increasing to Unsettled to Active day 4 (17th) with a chance of G1/Minor Storm intervals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	5	30
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	1	1	1	1
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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